MEETINGS OF THE BIOLOGICAL CLUB.

ORTON HALL, February 12, 1912.

The Biological Club met at 7:30 p. m. with the president, W. M. Barrows, presiding. The program of the evening consisted of an interesting and instructive lecture, "Among the White Mountains" by J. C. Hambleton.

For several years Mr. Hambleton has had charge of a boys' camp located in southwestern New Hampshire near the Connecticut River. During the course of his lecture a goodly number of fine lantern slides were shown. The lecture was particularly valuable in showing the many interesting physiographic, geological, floral and æsthetic features of the region around the camp; and particularly those incident to a trip in the White Mountains and the climbing of Mt. Washington.

Professors Schaffner and Osborn gave brief reports of a few of the more interesting papers presented at the Washington meeting of the American Association for the Advancement of Science.

Dr. R. J.. Seymour and Mr. Charles F. Stiles were elected to membership.

ORTON HALL, March 4, 1912.

The Club was called to order at 7:45 p. m. by the president. The first subject of the evening was by Prof. C. J. West on "The Law of Probability." Prof. West spoke of the necessity of mathematical knowledge on the part of the biologist who is doing statistical work. While this work does not require very difficult mathematics it does require great care to avoid errors.

The development of statistical work was shown from its beginning in solving the problems of the gambler to its present status. Since a finite number of measurements is never absolutely correct this science is now used in all the more delicate experimental sciences as a corrector of our erroneous senses. By this means also a set of constants may be made to stand for a great series of unintelligible data. Prof. West explained the development of a number of the formulæ as those for the law of mortality, the law of probability and the probable error.

J. L. King read an interesting paper on "The Life of Galton." Galton was one of the earliest scientists to use the statistical methods.

R. D. Whitmarsh was elected to membership.

ORTON HALL, April 1, 1912.

After reading and approval of the minutes, the Club listened to an informal talk by Dr. A. M. Bliele on a recent trip to Italy. Dr. Bleile told in a delightful manner about the people of the different places visited, their characteristics and manners of life; of visits to a half-extinct volcano and to Pompeii; of the monuments and ruins, the art palaces and cathedrals at Rome, Florence and Venice; and of the museum, aquaria, bacteriological and zoological institutes and other educational institutions at Naples, Pompeii and Vienna.

Mr. Forest Brown reviewed a series of papers by Raunkiaer on "The Statistics of Life-forms as a Basis for Biological Plant Geography." The author has made numerical studies of the position of buds in plants surviving the unfavorable season. He is able thus to classify plants into some thirty types the distribution of which he has traced in North America, Europe, and various other portions of the globe. Five of these are as follows: (1) Phanerophytes (trees) with surviving buds supported above the soil; (2) Geophytes with surviving buds at the earth's surface; (3) Hemicryptophytes with surviving buds just beneath the surface; (4) Cryptophytes with surviving buds deep in the earth; (5) Therophytes which survive only as seed.

With such data Raunkiaer has been successful in plotting biochores, or biological boundary lines, and in defining a number of life-zones which he farther shows to be determined by climate.

C. L. METCALF, *Secretary.*

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